

UNUSUAL EGG LAYING STRATEGIES OF THE
SMALL TORTOISESHELL BUTTERFLY,
AGLAIS URTICAE

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The small tortoiseshell is normally thought of as a butterfly which lays eggs in batches on the underside of the leaves of the stinging nettle, *Urtica dioica*. The result of this being that the ensuing brood of larvae, all from a single female, live gregariously up until their final instar and presumably gain advantage in terms of survivability by doing so (Stamp 1980, Chew and Robbins 1983, Courtney 1984).

Recent observations by the Author on the oviposition behaviour of the small tortoiseshell complicate this otherwise simple strategy. Whilst recording oviposition on large nettle patches during June and July 1984 females were observed laying eggs on top of previously deposited egg batches. The mechanism by which the female locates previously laid eggs is not known, however female searching behaviour was only of a limited nature, the butterfly would alight on a small number of nettle leaves and investigate the underside before oviposition. This behaviour could not be distinguished from the apparently normal situation where the female eventually chooses an 'eggless' leaf on which to oviposit.

Further evidence for this strategy of egg-laying has come from observations on the composition of larvae on nettle patches. First instar groups collected were found to be unusually large in some cases (>150). Larvae collected at a later stage commonly fell into two developmental groups, one group being one or two days behind the other. The numbers of larvae belonging to each group in the latter situation were not always of the same order and further investigation is being undertaken.

It seems to me that there may be several explanations for the above behaviour. The most obvious is that a female is returning to a previously deposited egg batch to lay additional eggs, implying the ability to memorise locations, as has been recorded for *Heliconiine* butterflies (Gilbert 1975, Benson et al 1975). The second explanation is that larger groups of eggs or larvae may have a greater advantage than small groups (probably true since this species has aposematic larvae), provided that food is not limiting. This applies equally to the same female returning to an egg mass, or a second female locating an egg mass, and is merely an extension of the idea of gregarious lifestyles being advantageous to this, and other species (Stamp 1980). A third possibility is that some females seek to spread their eggs in small batches onto the previously laid larger batches of other females, thereby gaining for their offspring the advantage

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of a gregarious lifestyle without the risk of catastrophic mortality rendering their genetic line extinct.

References

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SPRING RECORDS OF *Hyles livornica livornica* (LEPIDOPTERA:SPHINGIDAE) FROM SOUTH-WEST IRELAND. — On 6th April 1985, a female striped hawk-moth, *Hyles livornica livornica* (Esper), was captured indoors at Kilnaclasha near Skibbereen, West Cork (VC H3) (W 140366), 8km from the open sea. Two specimens of the painted lady, *Cynthia cardui* (L.), were observed on the same occasion.

A further female *H. l. livornica* was taken by Dr. T. Adams at Courtmacsherry Hotel, Courtmacsherry, on the West Cork coast (W 317423) on 30th April 1985. This specimen was also found indoors and was in a very worn condition.

During the first six days of April winds were from a generally southerly direction on the south coast of Ireland. This would have been suitable for immigration of this species. However, the prevailing winds were from a westerly to north-westerly direction towards the end of the month. This, combined with the very worn condition of the later specimen may indicate that it arrived at the beginning of the month.

Note: The nomenclature used here follows that of Eitschberger & Steiniger (1976) (*Atalanta* **7**: 71-73). These authors consider that *Hyles lineata lineata* (Fabricius, 1775) and *H. livornica livornica* (Esper, 1779) should be treated as distinct species. — K. G. M. BOND and J. A. GOOD, Department of Zoology, University College, Cork, Rep. of Ireland; LYNN WRIGHT, Kilnaclasha, Skibbereen, Co. Cork, Rep. of Ireland.